



Substitute for Form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

### Complete if Known

Application Number	10/809,317
Filing Date	03/24/2004
First Named Inventor	G. Ramanath
Group Art Unit	2813
Examiner Name	Kieten, Erik + Colleen Rodgers
Attorney Docket Number	5002.02-1

### U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Document Number	Publication Date/ Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			
CP	AA	US - 4,998,075	02-1991	Ogawa et al.	
CP	AB	US - 5,057,339	10-1991	Ogawa, Kazufumi	
CP	AC	US - 5,077,085	12-1991	Schnur et al.	
CP	AD	US - 5,079,600	01-1992	Schnur et al.	
CP	AE	US - 5,389,498	02-1995	Calvert et al.	
CP	AF	US - 5,468,597	11-1995	Calabrese et al.	
CP	AG	US - 5,500,315	03-1996	Calvert et al.	
CP	AH	US - 5,510,216	04-1996	Calabrese et al.	
CP	AI	US - 5,648,201	07-1997	Dulcey et al.	
CP	AJ	US - 5,939,150	08-1999	Stebble et al.	
CP	AK	US - 6,348,240 B1	02-2002	Calvert et al.	

### FOREIGN PATENT DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>3</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				

### OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
CR	AL	Ahrens, C. et al., "Electrical characterization of conductive and non-conductive barrier layers for Cu-metalization," Applied Surface Science, 1995, pp. 285-290, Vol. 91.	
CR	AM	Ding, P.J. et al., "Effects of the addition of small amounts of Al to copper: Corrosion, resistivity, adhesion, morphology, and diffusion," J. Appl. Phys., April 1994, pp. 3627-3631, Vol. 75(7).	
CR	AN	Ding, P.J. et al., "Oxidation resistant high conductivity copper films," Appl. Phys. Lett. May 1994, pp. 2897-2899, Vol. 64(21).	
CR	AO	McBryer, J.D. et al., "Diffusion of metals in silicon dioxide," J. Electrochem. Soc., June 1986, pp. 1242-1248, Vol. 133(6).	
CR	AP	Raghavan, G. et al., "Diffusion of copper through dielectric films under bias temperature stress," Thin Solid Films, 2995, pp. 168-176, Vol. 262.	

Examiner  
Signature

Colleen E. Raf

Date  
Considered

12/1/05

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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		First Named Inventor	G. Ramanath
		Group Art Unit	2813
		Examiner Name	Kelen, Erik + Colleen Rodgers
Sheet 2 of 2	Attorney Docket Number	5002.02-1	

Ⓢ	AQ	Read, M.A. and Tour, J.M., "Computing with molecules," Scientific American, June 2000, pp. 86-93, Vol. 282(6).	
Ⓢ	AR	Sekiguchi, A. et al., "Microstructural and morphological changes during thermal cycling of Cu thin films," J. Japan Inst. Metals, April 2000, pp. 379-382, Vol. 64(5).	
Ⓢ	AS	ASM Handbook Vol. 5, Surface Engineering, ASM International: Materials Park, Ohio, 1994, pp. 315-318.	
Ⓢ	AT	Porterfield, Inorganic Chemistry, A Unified Approach, Addison-Wesley: Reading, Massachusetts, 1984, pp. 487-488.	
Ⓢ	AU	Moshfegh, A.Z. et al., "Bias Sputtered Ta Modified Diffusion Barrier in Cu/Ta(V <sub>2</sub> Si(111) Multilayer Structure, Thin Solid Films, 370:10-17 (July 2000).	
Ⓢ	AV	Simon, Richard A. et al., "Synthesis and Characterization of a New Surface Derivatizing Reagent To Promote the Adhesion of Polypyrrole Films to n-Type Silicon Photoanodes: N-(3-(Trimethoxysilyl)pyrrole," J. Am. Chem. Soc., 104:2031-2034 (1982).	
	AW	<del>Yin, H. et al., "Nanostructured Iron-nickel thin films synthesized by electroless polypyrrole deposition," Mater. Phys. Mech., 4:56-61 (2001).</del>	
Ⓢ	AX	Wolf et al., "Silicon Processing for the ULSI Era," Vol. 1 - Process Technology, 2 <sup>nd</sup> Ed., Lattice Press; Sunset Beach, CA, 2000, pp. 438, 782-783.	

Ⓢ Yin, H. et al., "Nanostructured Iron-Nickel thin films synthesized by electroless polypyrrole deposition," Mater. Phys. Mech., 4: 56-61 (2001).

Colleen Rodgers 05/02/06

Examiner Signature	<i>Colleen Rodgers</i>	Date Considered	12/1/05
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